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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,150	01/26/2006	Rolf Mueller	3712161-00098	2740

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EXAMINER	
BEKKER, KELLY JO	

ART UNIT	PAPER NUMBER
1781	

NOTIFICATION DATE	DELIVERY MODE
01/06/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chicago.patents@klgates.com

Office Action Summary	Application No.	Applicant(s)	
	10/539,150	MUELLER ET AL.	
	Examiner	Art Unit	
	KELLY BEKKER	1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendments made October 20, 2010 have been entered.
Claims 23-31 are pending.

Priority

This application is a national stage entry of International Application No. PCT/CH03/00832, filed December 19, 2003, which claims priority to German Application No. 102609632, filed December 20, 2002. The copy of the certified copy of the priority has been filed with the instant Application, however, it is noted that the Foreign Application is not in English and thus it is unclear as to if the instant claims have priority to the Foreign Application.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The 103(a) rejection of claim 23 as being unpatentable over Chakraborty et al (US 5262191) in view of Fennema (Food Chemistry Third Edition pages 128, 129, and 201) and as evidenced by Hui (ed.) Handbook of Food Science, Technology, and Engineering Volume 1 page 3-8 has been withdrawn light of applicant's amendments made October 20, 2010; Specifically, Chakraborty does not teach the first starch as selected from the group of starches as listed in the newly added limitation.

Claims 23, 26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woltjes et al (WO 00/44241) in view of Klingler et al (US 2001/0026827 A1) and Gilleland et al (US 6,375,981 B1) and Fennema (Food Chemistry Third Edition pages 128, 129, and 201) and as evidenced by Hui (ed.) Handbook of Food Science, Technology, and Engineering Volume 1 page 3-8.

Woltjes et al (Woltjes) teaches of a candy having a starch matrix by teaching of a starch composition useful in replacing gelatin compositions in foodstuffs, including confectionaries of pastilles, jellies, fruit drops, and clear mints, which are all candies (abstract, page 7 lines 23-34, and page 12 lines 4-14). Woltjes teaches that the starch

composition is comprised of a starch matrix including a first fraction which is a crosslinked starch, and is preferably a hydroxypropylated distarch phosphate or distarch adipate, and a second fraction which is a depolymerized starch which has a reduced degree of polymerization (DPn or DP) from acid hydrolysis or enzyme hydrolysis or oxidation (page 4 line 4 through page 7 line 22, page 9 lines 11-14, and page 10 lines 2-11). Woltjes teaches that the ratio of the starch fractions are easily determined by mixing and testing to obtain the desired properties. Woltjes teaches that suitable ratios of the first to second fraction range from 5-95% of each (the first or second fraction), respectively, to 25-75% of each (the first or second fraction) respectively; thus Woltjes teaches that the candy contains 5-95% of the second starch based on the sum of the first and second starch. Refer to page 8 lines 10-18. As the starch components are not slurries, and thus are in terms of dry weight, the weight of the starch taught by Woltjes is by dry weight. Woltjes teaches that in general when more elasticity is desired, one increases the cross-linked fraction, and when more gelling and/or clarity is desired one increases the depolymerized fraction (page 8 lines 28-31). Woltjes teaches that the starch matrix replaces up to 100% of the gelatin (page 10 lines 30-36). Woltjes teaches that the starch, including the first starch fraction is a potato starch (Example 1- page 14, and claim 8).

Woltjes does not specifically teach the DP of the first starch as more than 1000 as recited in claim 23, to the DP of the second starch as less than 300 as recited in claim 23, preferably less than 100 as recited in claim 31, and most preferably less than 50 as recited in claim 26, to the amylase content of the second starch as more than 30% as recited in claim 23, and to the second starch as capable of forming a micro-crystalline-crosslinked network with the first starch as recited in claim 23.

Klingler et al (Klingler) teaches of producing a thin boiled starch (which is a starch with a reduced degree of polymerization) to use as a gelatin substitute (abstract). Klingler teaches that starches having an amylase content of greater than 40% are preferred, as starches with an amylase content over about 40% lead to products having a very high quality grade (paragraph 0034).

Gilleland et al (Gilleland) discloses starch based systems for replacing gelatin in edible compositions (abstract, column 1 lines 41-59, and column 2 lines 46-54). Gilleland teaches that the starch based gelatin replacing composition includes a starch with a DE (dextrose equivalent) of less than 1, preferably with no measurable DE (abstract and column 1 lines 54-56). Gilleland teaches that the starch with the low DE may be a hyhdroxypropylated starch (column 4 lines 6-28). Gilleland teaches that the modified starch provides for an acceptable balance of critical variables including mass viscosity, strength, flexibility, and thermoreversibility (column 3 lines 17-21). It is noted that DP = 100/DE, and thus Gilleland teaches of a DP of greater than 100, preferably approaching infinity, in other words, as high as possible.

Fennema teaches that it was known to modify starches depending on the desired affect of the starch in the final food product (page 201). Fennema teaches that less conversion resulting in a higher DP provides for ability of the starch to produce viscosity and prevent sugar crystallization and that greater conversation resulting in a lower DP provides for enhanced sweetness, flavor enhancement, and humectancy (pages 128-129 and Table 3.7). Fennema teaches that thin boiling (which is depolymerized starch) and high amylase corn starch are used when especially strong gels are desired (page 129). Fennema teaches that a starch with a DE of 20-60 and thus a DP of about 1.6-5 has a mild sweetness and rapid dissolvability (page 129).

As evidenced by Hui ed. (Handbook of Food Science, and Technology, and Engineering page 3-8) amylose from maize starches were known to have a DP of 200-1200 and amylose from potato starches were known to have a DP of 1000-6000.

Regarding the DP of the first starch as more than 1000, as Woltjes teaches that the first starch is made from potato starch and as evidenced by Hui's showing that potato starch was known to have a DP of 1000-6000, one of ordinary skill in the art at the time the invention was made would expect that the first starch as taught by Woltjes have a DP of about 1000-6000. Additionally, it would have been obvious to one of ordinary skill in the art for the first starch fraction, which is the hydroxypropylated starch in the gelatin replacing composition of Woltjes, to have a DP as high as possible in view of Gilleland. One would have been motivated for the DP to be as high as possible as

Gilleland teaches that hydroxypropylated starches in gelatin replacing compositions have a DP which is as high as possible (i.e. approaching infinity) and that such starches contribute to gelatin replacing compositions which have an acceptable balance of critical variables including viscosity, strength, and flexibility. Thus, based upon the suggestion of Woltjes to have a first starch without a reduced DP and the teachings of Gilleland for the degree of polymerization to be as high as possible, for the first starch fraction to include a starch with a high DP, such as greater than 1000, would have been obvious.

Regarding the DP of the second starch as less than 300, preferably less than 100, and most preferably less than 50, it would have been obvious to one of ordinary skill in the art that the optimum DP for the starch component would have been obvious and routine determination to one of ordinary skill in the art depending on the final product desired as taught by Fennema. For example, one of ordinary skill in the art would have been motivated for the second starch fraction as taught by Woltjes to be corn starch, which was known to have a DP of 200-1200 as evidenced by Hui, in order to form a product with a strong gel as taught by Fennema. One would have been further motivated for the DP of the corn starch to be lowered, such as below 200, based on the suggestion of Woltjes for the second starch to be depolymerized, the teaching of Fennema that thin boiling starches form strong gels, the teaching of Fennema that a lower DP provides flavor enhancement and humectancy, and the teaching of Fennema that starch with a DP of about 1.6-5 has mild sweetness and rapid dissolvability.

Regarding the amylase content of the second starch as more than 30%, it would have been obvious to one of ordinary skill in the art for the second starch fraction as taught by Woltjes, which is the depolymerized starch in a gelatin replacing composition of Woltjes, to have an amylase content of greater than 40% as Klingler teaches that depolymerized starches in gelatin replacing compositions which have an amylase content of greater than 40% are preferred as such starches lead to products having a very high quality grade.

Regarding the second starch as capable of forming a micro-crystalline-crosslinked network with the first starch, because the references of record teach of the same first and second starch fraction as instantly claimed, one of ordinary skill in the art

would expect that the starch fractions as taught by the references be capable of performing the same functions as the instantly claimed starches, including, the second starch as taught by the references as inherently being capable of forming a micro-crystalline crosslinked network with the first starch as taught by the references, absent any clear and convincing arguments and/or evidence to the contrary.

Claims 24, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woltjes et al (WO 00/44241) in view of Klingler et al (US 2001/0026827 A1) and Gilleland et al (US 6,375,981 B1) and Fennema (Food Chemistry Third Edition pages 128, 129, and 201) and as evidenced by Hui (ed.) Handbook of Food Science, Technology, and Engineering Volume 1 page 3-8, further in view of Lees et al (Sugar Confectionary and Chocolate Manufacture, pages 5, 44, 45, and 241).

Woltjes teaches of a starch matrix with 5-95% dry weight of the second starch material based on the sum of the first and second starch, to be used in confectionary products as a gelatine replacement, as discussed above. Woltjes is silent to the composition of the confectionary products including the candy as comprising 0-50% plasticizer dry weight and 1-90% sugar and sugar types dry weight as recited in claim 24, preferably 3-30% plasticizer dry weight and 20-75% sugar and sugar types dry weight as recited in claim 27, and to the candy as comprising a retrogradation-inhibiting material as recited in claim 25.

Lees et al (Lees) teaches that conventional gelatine jellies, which are gelatine confectionaries, comprise 25% powdered gelatine, 80% sugar, and 80% glucose syrup which is a retrogradation-inhibiting material (page 241). Lees teaches that regular glucose syrup has a moisture content of 18.7%, and thus a dry weight of 81.3% (page 5). Thus, the composition for conventional gelatine jellies as taught by Lees comprises 0% plasticizer, 25% gelatine, 80% sugar and 80% glucose syrup total weight and 0% plasticizer, about 15% gelatine, 47% sugar, and 38% glucose dry weight. Lees teaches that sorbitol is used in confectionary manufacturing from 5-15% to produce a cooling taste on the tongue, slow down the loss of moisture from the confection to the air, to

soften confections, and improve freshness (pages 44 and 45). Thus, the confectionary product, such as the gelatine jellies taught by Lees may contain 5-15% sorbitol as a plasticizer based on the total weight, and about 3-9% based on dry weight of the gelatine jelly composition of Lees.

Regarding the composition of the confectionary products including the candy as comprising 0-50%, preferably 3-30% plasticizer dry weight, 1-90%, preferably 20-75% sugar and sugar types dry weight, and a retrogradation-inhibiting material, it would have been obvious to one of ordinary skill in the art for the confectionary as taught by Woltjes to be of a known confectionary composition, including 47% dry weight sugar, 0-9% sorbitol which is a plasticizer, and glucose syrup, which is a retrogradation-inhibiting material, such as taught by Lees. One would have been motivated to use the composition as taught by Lees in order to form a conventional confectionary product. One would have been further motivated to use sorbitol, which is a plasticizer from 5-15% total weight, in order to produce a cooling taste on the tongue, slow down the loss of moisture from the confection to the air, to soften confections, and improve freshness as taught by Lees. To use known ingredients for their known and intended function, and to vary the range of such ingredients from their known range would have been obvious and routine determination to one of ordinary skill in the art.

Claims 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woltjes et al (WO 00/44241) in view of Klingler et al (US 2001/0026827 A1) and Gilleland et al (US 6,375,981 B1) and Fennema (Food Chemistry Third Edition pages 128, 129, and 201) and as evidenced by Hui (ed.) Handbook of Food Science, Technology, and Engineering Volume 1 page 3-8, further in view of Yatka et al (US 5458892).

Woltjes teaches of a starch matrix with 5-95% dry weight of the second starch material based on the sum of the first and second starch, to be used in confectionary products as a gelatine replacement, as discussed above. Woltjes is silent to the candy as including retrogration inhibiting material selected from the group

consisting/comprising of glycogen and a dextrin with a degree of branching of more than 0.05 as recited in claims 28 and 30, preferably more than 0.3 as recited in claim 29.

Yatka et al (Yatka) teaches that highly branched indigestible dextrin, such as Fibersol 2, is added to confectionary compositions, including gummy type candies, wherein the ingredient does not induce dental cavities, can be consumed by diabetics, does not contribute to calories, does not cause gastrointestinal disturbances, acts as a bulking and sweetening agent, is water soluble, has properties like fiber, improves texture, flavor, and shelf life, replaces conventional sweeteners, stabilizes aspartame, and provides for faster flavor release (Column 1 lines 17-58, Column 2 lines 14-50, Column 5 lines 1-46, Column 6 lines 13-62, and Example 196).

Regarding the candy as including retrogration inhibiting material selected from the group consisting of glycogen and a dextrin with a degree of branching of more than 0.05, preferably more than 0.3, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include dextrin, with a high degree of branching, in the candy composition of Woltjes in view of Yatka. One would have been motivated to do so in order to gain the benefits of highly branched dextrin, including improved texture, flavor, and shelf life, and to provide for faster flavor release, as taught by Yatka. Note: As the dextrin taught by Yatka is highly branched, one of ordinary skill in the art would expect that the reference encompass a suggestion of dextrin with a degree of branching above 0.05, preferably 0.3 as instantly claimed. Based on the suggestion of the prior art to have a high degree of branching, to determine the optimum degree would have been obvious and routine determination to one of ordinary skill in the art.

Response to Arguments

Applicant's arguments with respect to the prior art rejections have been considered but are moot in view of the new ground(s) of rejection as necessitated by applicant's amendments.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KELLY BEKKER whose telephone number is (571)272-2739. The examiner can normally be reached on Monday through Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kelly Bekker/
Examiner
Art Unit 1781